



Material Safety Data Sheet

Product No. 29-32 Germanium Chips

Issue Date (12-27-08)

Review Date (04-12-12)

Section 1: Product and Company Identification

Product Name: Germanium Chips

Synonym: None

Company Name

Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477

Domestic Phone (800) 237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

International Phone (01) (530) 243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

Chemtrec Emergency Number 1-800-424-9300 24 hrs a day.

Section 2: Composition / Information on Ingredients

Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)	%	OSHA PEL mg/m³	ACGIH TLV mg/m³	NTP	IARC	OSHA regulated
Germanium (7440-56-4)	99.9	NE	NE	No	No	No

Section 3: Hazard Identification

Emergency overview

Appearance: Grey chips. 1-3mm random sized pieces.

Immediate effects: Irritating to eyes, respiratory system and skin.

Potential health effects

Primary Routes of entry: Inhalation, ingestion

Signs and Symptoms of Overexposure: Liver injury may occur. Kidney injury may occur.

Blood disorders. Cough. Difficulty in breathing.

Eyes: Causes eye irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Ingestion: May be harmful if swallowed.

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Chronic Exposure: Liver injury may occur. Kidney injury may occur. Blood disorders.

Cough. Difficulty in breathing

Chemical Listed As Carcinogen Or Potential Carcinogen: None

See Toxicological Information (Section 11)

Potential environmental effects

See Ecological Information (Section 12)

Section 4: First Aid Measures

If accidental overexposure is suspected

Eye(s) Contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin Contact: Wash off with soap and plenty of water. Consult a physician.

Inhalation: If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

Ingestion: If swallowed. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Note to physician

Treatment: ND

Medical Conditions generally Aggravated by Exposure: ND

Section 5: Fire Fighting Measures

Flash Point: NA

Flammable Limits: NA

Auto-ignition point: ND

Fire Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special Fire Fighting Procedures: Wear self contained breathing apparatus for fire fighting if necessary.

Unusual Fire and Explosion Hazards: Finely divided powder may ignite if heated in air.

Germanium oxidizes at 600-700 °C, does not volatilize to approximately 1350 °C

Hazardous combustion products: Germanium oxides.

DOT Class: Not regulated.

Section 6: Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: Use personal protective equipment. Avoid dust formation. Ensure adequate ventilation. Do not let product enter drains. Pick up and arrange disposal without creating dust. Keep in suitable, closed container for disposal.

Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage

Precautions to be Taken in Handling and Storage: Avoid contact with skin and eyes.

Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep container tightly closed in a dry and well-ventilated place.

Storage temperature: Store in cool place.

Storage Pressure: NA

Section 8: Exposure Controls / Personal Protection

Engineering Controls

Ventilation required: Use fume hoods or respiratory protection as required. If melting or high temperature processing use collection/extraction ventilation.

Personal Protection Equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Protective gloves: Handle with gloves.

Skin protection: Wear appropriate protective clothing.

Eye protection: Safety glasses.

Additional clothing and/or equipment: ND

Exposure Guidelines

See Composition/Information on Ingredients (Section2)

Section 9 Physical and Chemical Properties

Appearance and Physical State: Grey chips

Odor (threshold): None

Specific Gravity (H₂O=1): 5.35 g/ml at 25 °C

Vapor Pressure (mm Hg): ND

Vapor Density (air=1): ND

Percent Volatile by volume: ND

Evaporation Rate (butyl acetate=1): ND

Boiling Point: 2830 °C

Freezing point / melting point: 937 °C

pH: NA

Solubility in Water: Insoluble.

Molecular Weight: 72.64 g/mol

Section 10: Stability and Reactivity

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Avoid dust formation and incompatibilities. Avoid temperatures above 1000 °C to prevent fumes.

Materials to Avoid (Incompatibility): Strong oxidizing agents, Halogens.

Hazardous Decomposition Products: Under fire conditions germanium oxides.

Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

Results of component toxicity test performed: Germanium metal is relatively non-toxic by all routes of exposure, particularly in massive forms. The Germanium salts ingested in high doses may cause kidney and bladder injury, native element passes without evident effect.

Human experience: ND

This product **does not** contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

Section 12: Ecological Information

Ecological Information: ND

Chemical Fate Information: ND

Section 13 Disposal Considerations

RCRA 40 CFR 261 Classification: ND

Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

Section 14: Transportation Information

US DOT Information: Proper shipping name: Not regulated.

IATA: Proper shipping name: Not regulated.

IMO: Proper shipping name: Not regulated.

Marine Pollutant: No

Canadian TDG: Not regulated.

Section 15: Regulatory Information

United States Federal Regulations

MSDS complies with OSHA's Hazard Communication Rule 29, CFR 1910.1200.

SARA: No

SARA Title III: No

RCRA: No

TSCA: 7440-56-4 is listed on the TSCA Inventory.

CERCLA: No

State Regulations

California Proposition 65: None

International Regulations

Canada WHMIS: ND

Europe EINECS Numbers: 231-164-3

Section 16: Other Information

Label Information: ND

European Risk and Safety Phrases: S24/25, Avoid contact with skin and eyes. S28A, After contact with skin, wash immediately with plenty of water. S37, Wear suitable gloves. S45, In case of accident or if you feel unwell, seek medical advice immediately.

European symbols needed: ND

Canadian WHMIS Symbols: ND

Hazard Rating: Health: **ND**; Fire: **ND**; Reactivity: **ND**

(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

Abbreviations used in this document

NE= Not established

NA= Not applicable

NIF= No Information Found

ND= No Data

Disclaimer

Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of

information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.

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